

OCCUPATIONAL QUALIFICATION

Software Developer

Level 5 | SAQA ID – 118707



Edge Training is a proudly Level 1 B-BBEE accredited skills training provider with a national footprint and full accreditation with QCTO and SETA partners. We remain aligned with evolving QCTO regulations, ensuring that skills development in South Africa continues to meet national standards. Our commitment to compliance, excellence and quality assurance reinforces our role in strengthening the national framework and contributing meaningfully to the advancement and sustainability of skills development training.

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Qualification Information

Occupational Qualification: Software Developer

Level 5

SAQA ID – 118707

220 Credits

Entry Requirements:

The minimum entry requirement for this qualification is:

- NQF Level 4 qualification

Occupational Purpose:

The purpose of this qualification is to prepare a learner to operate as a Software Developer.

A Software Developer analyses a set of requirements, translates these into a working software solution using a programming language. They test, implement and maintain software applications to meet client specifications as well as functional and technical requirements.

Occupational Tasks:

- Interrogate the specification and problem and interpret it into code and articulate in writing (NQF Level 5)
- Build a logical flow using the framework and methodologies at their disposal to propose possible solutions to business challenges (NQF Level 5)
- Programme effectively using a suitable programming language to develop and test new solutions and update existing solutions (NQF Level 5)

Qualification Information

Purpose of the Knowledge Modules:

The knowledge acquired will enable learners to demonstrate an understanding of:

(KM-01):

- Build an understanding of what computers can do and the processes that make them function in terms of the four major parts: input, output, CPU (central processing unit) and memory
- Overview of networks and connectivity as well as security issues pertaining to IT ecosystems

(KM-02):

- Build an understanding of the functioning and purpose of information, computer technology and computer hardware units
- Principles of electronic communication and the operation and functioning of soft-ware packages, including the design of presentations

(KM-03):

- Build an understanding of the design aspect applicable to various types of publications and documents

(KM-04)

- Acquire mathematical thinking theory for solving problems and acquire basic maths knowledge for use during data analytics

(KM-05):

- Understanding programming as creating a set of instructions to a computer on how to perform a task using coding and programming languages

(KM-06):

- The main focus is to build an understanding of these topics: Core Programming, Object-Oriented Programming, General Software Development, Web Applications, Desktop Applications, Databases, Manage the Application Life Cycle, Build the User Interface by Using HTML5, Format the User Interface by Using CSS, and Code by Using JavaScript

(KM-07)

- Understanding of the modelling tools, topics and theory and how modelling assist in focussing on, capturing, documenting and communicating a system design

Qualification Information

Purpose of the Knowledge Modules:

The knowledge acquired will enable learners to demonstrate an understanding of:

(KM-08)

- Acquire general knowledge and understanding of the principles and methods to obtain, query, manipulate and present data with and without MVC

(KM-09)

- Principles and techniques applied during the SDLC, use of programming languages, design and development of algorithms and the importance of security during the development of software solutions

(KM-10)

- Acquire general knowledge and understanding of the various legislations governing the workplace and their implications for the employer and employees
- The learning of this module will also enable the learner to acquire an understanding of the principles of areas of performance management, business planning concepts, costing of products and concepts of general ethical behaviour and its impact in the workplace

(KM-11)

- The main focus is to build an understanding of the impact of 4IR on communities, individuals and businesses and important skills for future needs

(KM-12)

- The main focus of the learning in this knowledge module is to build an understanding of design thinking principles and application in the workplace

Purpose of the Practical Modules:

The focus of the learning in the practical modules is on providing the learner an opportunity to:

(PM-01):

- Develop skills to apply and use information, computer technology and computer software
- Acquire the skills to use electronic communication and soft-ware packages, including compiling text documents and designing of presentations for visualisation of information

Qualification Information

Purpose of the Practical Modules:

The focus of the learning in the practical modules is on providing the learner an opportunity to:

(PM-02):

- Provide the learner with an opportunity to acquire the skills to use spreadsheets to analyse and visualise data

(PM-03):

- The focus of the learning in this module is on providing the learner with an opportunity to acquire the skills to use spreadsheets to analyse and visualise data

(PM-04):

- Acquire the skills to use Business Intelligence (BI) Technologies to analyse and visualise data (BI toolsets and technologies refer to e.g. Power BI, R, Python, Tableau, Hadoop, Spark, etc.)

(PM-05):

- Apply various methods and tools to analyse data and create meaningful insights

(PM-06):

- Acquire mathematical thinking skills for solving problems and to acquire basic maths skills for using software toolkits or platforms
- Functional understanding of maths and for logical reasoning

(PM-07):

- Opportunity to acquire the ability to apply basic programming skills and code to use a software toolkit/platform in the field of study or employment

(PM-08):

- Use HTML5 Open Source frameworks and libraries to implement programming logic, define and use variables, perform looping and branching, develop user interfaces, capture and validate user input, store data, and create wellstructured application

(PM-09):

- Design and create web applications, mobile apps and graphical user interfaces (GUIs), using the Model-View-Controller (MVC) framework as an architectural pattern and to separate an application into three main logical components Model, View, and Controller

Qualification Information

Purpose of the Practical Modules:

The focus of the learning in the practical modules is on providing the learner an opportunity to:

(PM-10):

- Provide the learner with an opportunity to write code that logically solves a given problem
- Learners will learn how to write, debug, maintain and document code and create unique and efficient business solutions by using cloud automation platform tools and functionalities

(PM-11):

- Write code that logically solves a given problem. Learners will learn how to write, debug, maintain and document code

(PM-12):

- Apply development methodologies and the fundamental principles of software development, including fundamental mathematical and logical concepts that underpin computational and systems thinking
- Plan, design, develop, test, secure, document and deploy a software system to meet organisational requirements

(PM-13):

- Acquire the skills to participate in a design thinking intervention, apply design thinking methodologies and look for opportunities to apply the same methodology in world-of-work and personal life

(PM-14):

- The focus of the learning in this module is on providing the learner with an opportunity to acquire the skills to function ethically and effectively in the workplace

Qualification Information

Purpose of the Workplace Modules:

The focus of the work experience module is on providing the learner an opportunity to:

(WM-01):

- Interrogate the specification and problem, interpret it into code and articulate in writing

(WM-02):

- Build a logical flow using the framework and methodologies at their disposal to propose possible solutions to business challenges

(WM-03):

- Programme effectively using a suitable programming language to develop and test new solutions and update existing solutions

(WM-04):

- Alert the publisher to plagiarism, copyright or defamation issues and obtain permissions

Edge Training Will Provide

- Full project management of qualification
- Registration of the qualification with the relevant SETA
- Enrolment of the learner with QCTO for the qualification
- Facilitation by a Subject Matter Expert
- Venue suitable for the number of delegates
- Course material
- Monthly progress reports via the Edge Client Portal
- Booking of final exam (EISA) with the relevant SETA
- Certificates of Attendance

Qualification Structure

Software Developer | Total Credits: 220

	Knowledge Modules	Level	Credits
KM01	Computers and Computing Systems	4	12
KM02	Desktop and Professional Software to Communicate and Visualise Information	4	8
KM03	Automated Webscraping as a Data Source	5	8
KM04	Logical Thinking and Basic Calculations	4	2
KM05	Computing Theory	4	2
KM06	Software Development with HTML5, Opensource Frameworks and Libraries	5	16
KM07	UML as Standard Modelling Language for Software and Systems Development	5	4
KM08	Obtaining, Querying, Manipulating and Presenting Data with and without MVC	5	6
KM09	Software Development Life Cycle, Programming Languages, Algorithms and Security	5	3
KM10	Introduction to Software Developer Governance, Legislation and Ethics	4	2
KM11	4IR and Future Skills	4	2
KM12	Design Thinking Principles for Innovation	4	1

Knowledge Modules | Total Credits: 66

	Practical Modules	Level	Credits
PM01	Use Software to Communicate and Visualise Information	4	3
PM02	Use and Manage Spreadsheets and Workbooks	4	3
PM03	Use Desktop Applications to Analyse, Visualise and report on Data	5	3
PM04	Use a Visual Analytics Platform and Visualisation Tools to Analyse, Visualise and report on Data	5	3
PM05	Query and Massage Data	5	3
PM06	Apply Logical Thinking and Maths	4	3
PM07	Apply Code to use a Software Toolkit/Platform in the Field of Study or Employment	5	3
PM08	Develop Software using HTML5, Opensource Frameworks and Libraries	5	16
PM09	Design and Build Web Applications, Desktop Graphical User Interfaces or Mobile Apps	5	8

	Practical Modules	Level	Credits
PM10	Use a Cloud Automation Platform to Create Solutions	4	8
PM11	Develop Software using Python	5	12
PM12	Apply the Development Cycle when Developing Software	5	16
PM13	Participate in a Design Thinking for Innovation Workshop	4	4
PM14	Query and Message Data	4	4

Practical Modules | Total Credits: 89

	Workplace Modules	Level	Credits
WM01	Technical Requirement Analysis and Refinement	5	15
WM02	Modelling Processes	5	15
WM03	Programming for Software Solution Development	5	25
WM04	Capstone project	5	10

Work Experience Modules | Total Credits: 65

Additional Information

Alternative titles used by the industry:

- Applications developer
- ICT Programmer
- Front-end developer
- Back-end developer
- Full-stack developer

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